CLAIMS:

1. A processor-implemented method for processing blocks in a blockchain by a worker process participating in parallel processing of blocks in the blockchain in a transaction processing system, comprising:

retrieving, from the blockchain, a block for processing based on a block number associated with the block and an offset associated with the worker process;

processing the block based on executing one or more function calls or database queries against external compute resources in which data used to validate transactions included in the block is stored; and

inserting the processed block into a buffer associated with a leader process, wherein an index of the processed block in the buffer is based on a size of the buffer and the block number, wherein the processed block includes an indication that the block is an unreported block pending reporting by the leader process to one or more computing resources, and wherein the processed block is inserted into the buffer without obtaining a lock on the buffer blocking a block reporting leader and other worker processes other than the worker process in the transaction processing system from concurrently accessing a location in the buffer associated with the index.

2. The method of Claim 1, wherein the offset is based on a number of worker processes instantiated by the leader process for processing blocks from the blockchain in parallel.

3. The method of Claim 2, wherein the offset comprises a random number modulo the number of worker processes.

4. The method of Claim 1, wherein the block number associated with the block modulo a number of instantiated worker processes equals the offset.

5. The method of Claim 1, wherein inserting the processed block into the buffer comprises overwriting a null entry or a reported block in the buffer at an index equal to the block number modulo a size of the buffer.

6. The method of Claim 1, wherein the buffer comprises an interleaved buffer written to by the worker process and a plurality of other worker processes.

7. The method of Claim 6, wherein a portion of the interleaved buffer associated with the worker process has a size is equal to a size of the interleaved buffer divided by a number of worker processes instantiated by the leader process.

8. The method of Claim 1, wherein inserting the processed block into the buffer comprises writing the processed block at the index in the buffer without obtaining a lock on the buffer.

9. The method of Claim 1, wherein processing the block comprises:

retrieving transaction data associated with the block from the one or more computing resources; and

validating the block based on the retrieved transaction data.

10. The method of Claim 1, wherein:

retrieving the block for processing comprises receiving, via broadcast transmission from the blockchain, information identifying a block number of a last block generated on the blockchain; and

processing the block comprises determining that the worker process is responsible for processing the block based on the block number of the last block generated on the blockchain and the offset.

11. The method of Claim 1, wherein retrieving the block for processing comprises requesting blocks for processing from a computing resource from the one or more computing resources associated with the worker process.

12. A system for processing blocks in a blockchain by a worker process participating in parallel processing of blocks in the blockchain in a transaction processing system, comprising:

at least one memory having executable instructions stored thereon; and

one or more processors configured to execute the executable instructions in order to cause the system to:

retrieve, from the blockchain, a block for processing based on a block number associated with the block and an offset associated with the worker process;

process the block based on executing one or more function calls or database queries against external compute resources in which data used to validate transactions included in the block is stored; and

insert the processed block into a buffer associated with a leader process, wherein an index of the processed block in the buffer is based on a size of the buffer and the

block number, wherein the processed block includes an indication that the block is an unreported block pending reporting by the leader process to one or more computing resources, and wherein the processed block is inserted into the buffer without obtaining a lock on the buffer blocking a block reporting leader and other worker processes other than the worker process in the transaction processing system from concurrently accessing a location in the buffer associated with the index.

13. The system of Claim 12, wherein the offset is based on a number of worker processes instantiated by the leader process for processing blocks from the blockchain in parallel.

14. The system of Claim 13, wherein the offset comprises a random number modulo the number of worker processes.

15. The system of Claim 12, wherein the block number associated with the block modulo a number of instantiated worker processes equals the offset.

16. The system of Claim 12, wherein to insert the processed block into the buffer, the one or more processors are configured to cause the system to overwrite a null entry or a reported block in the buffer at an index equal to the block number modulo a size of the buffer.

17. The system of Claim 12, wherein the buffer comprises an interleaved buffer written to by the worker process and a plurality of other worker processes.

18. The system of Claim 17, wherein a portion of the interleaved buffer associated with the worker process has a size is equal to a size of the interleaved buffer divided by a number of worker processes instantiated by the leader process.

19. The system of Claim 12, wherein to insert the processed block into the buffer, the one or more processors are configured to cause the system to write the processed block at the index in the buffer without obtaining a lock on the buffer.

20. The system of Claim 12, wherein to process the block, the one or more processors are configured to cause the system to:

retrieve transaction data associated with the block from the one or more computing resources; and

validate the block based on the retrieved transaction data.

21. The system of Claim 12, wherein:

to retrieve the block for processing, the one or more processors are configured to cause the system to receive, via broadcast transmission from the blockchain, information identifying a block number of a last block generated on the blockchain; and

to process the block, the one or more processors are configured to cause the system to determine that the worker process is responsible for processing the block based on the block number of the last block generated on the blockchain and the offset.

22. The system of Claim 12, wherein to retrieve the block for processing, the one or more processors are configured to cause the processing system to request blocks for processing from a computing resource from the one or more computing resources associated with the worker process.

23. A non-transitory computer-readable medium having executable instructions stored thereon which, when executed by one or more processors, performs an operation for processing blocks in a blockchain by a worker process participating in parallel processing of blocks in the blockchain in a transaction processing system, the operation comprising:

retrieving, from the blockchain, a block for processing based on a block number associated with the block and an offset associated with the worker process;

processing the block based on executing one or more function calls or database queries against external compute resources in which data used to validate transactions included in the block is stored; and

inserting the processed block into a buffer associated with a leader process, wherein an index of the processed block in the buffer is based on a size of the buffer and the block number, wherein the processed block includes an indication that the block is an unreported block pending reporting by the leader process to one or more computing resources, and wherein the processed block is inserted into the buffer without obtaining a lock on the buffer blocking a block reporting leader and other worker processes other than the worker process in the transaction processing system from concurrently accessing a location in the buffer associated with the index.